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Market Performance in the Food Sector

U.S. DEPARTMENT OF AGRICULTURE

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MARKET PERFORMANCE IN THE FOOD SECTOR*

by
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Let me preface my comments by commending this subcommittee for addressing a particularly timely and critical problem. Interest in performance in the food industry has never been stronger. The U.S. Congress considered in the past year several legislative proposals to form a special commission to study food pricing. The proposed study group, similar to the 1964 National Commission on Food Marketing, would be charged with recommending means of improving food industry market performance. This legislative action as well as your subcommittee's strong interest are in response to very real concerns on the part of food producers and consumers about how the food sector is performing.

Before I address this important issue, however, I must qualify my remarks with some reservations. These can be best verbalized by quoting Professor George Brandow, Penn State University, who was the executive director of the 1964 National Commission on Food Marketing:

> Economists asked to appraise the economic performance of an industry have a difficult task. If they confine themselves to the elegant abstractions of rigorous general theory, they find few handles by which to grasp the inelegant real world and are wholly unprepared for some of the institutional and dynamic characteristics of the industry. If they adopt the approach of industrial organization economics, they find standards imprecise, measurement both conceptually and empirically difficult, and judgment usually necessary to conclusions. Yet to insist on elegantly-derived results that are fully conclusive and leave no room for judgment is to require the impossible. The facts are that "good performance" is a set of sometimes conflicting goals, the economic world is complex, changing, and never fully knowable, and the economic results of interest range along continuous scales

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> from good to bad rather than being clearly one or the other. Economists must accept this if they are to produce valid information, and the public must accept it if effective use is to be made of such information for policy purposes.[2]

I concur completely with Professor Brandow's pragmatic observations concerning evaluation of economic performance. I cannot offer you unequivocal assessments of food industry market performance. However, I can and will offer you a general perspective of market performance, and provide some imprecise measures.

Defining and Measuring Market Performance

Continuing public concern over the performance of the food industry becomes more intense during periods of rapidly rising food prices and/or periods of declining farm prices. Yet either of these situations may be due to economy-wide circumstances beyond the direct control of participants in the food sector. This raises a question of just what market performance is and how one measures and evaluates it.

Market performance can be evaluated from many perspectives or points of view. For our purposes, the public interest perspective is more appropriate than that of any particular interest group in the industry or outside it. Market performance means the extent to which the interactions of buyers and sellers in a market—as influenced by market rules and institutions—achieve results that are consistent with the public interest. Thus, analysis of performance should take cognizance of the economic interests of all industry participants—including input suppliers, farmers, cooperatives, processors, distributors, labor organizations, and consumers—and Government rules and regulations. Again, to quote Professor Brandow on this point:

> Typically, each economic group wants the activities of other groups to be scrutinized but expects its own virtue to be taken for granted. The difficulties involved in getting sustained support through the political process for thorough appraisal of the performance of the food industry (or of any industry) seem at least as formidible as the difficulties of making the economic evaluations.[3]

For a balanced analysis, several dimensions of performance should be evaluated. The major economic dimensions are efficiency, equity, progressiveness, and responsiveness. To those we must add social dimensions of performance involving such things as environ-

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[2]G. E. Brandow, "Appraising the Economic Performance of the Food Industry," Bicentennial Lecture Series of the Economic Research Service, U.S. Department of Agriculture, Sept. 8, 1976, pp. 1-2.

[3]*Ibid*, p. 4.

mental concerns and product safety. Performance consistent with the public interest, therefore, involves a wide range of goals and criteria that usually are in conflict.

For example, rapid development and adaptation of new technology may improve productivity but may also have side-effects of increasing structural unemployment; increasing the comparative advantage of large firms, leading to higher concentration of sales; or producing undesirable environmental effects.

The food sector is becoming an increasingly complex vertical and horizontal array of firms, workers, institutions, and market rules. Input suppliers, processors, and distributors are becoming more diversified and frequently operate across many product lines, commodities, and markets. This makes it more difficult to measure and evaluate performance—financial and operating data are usually available only for the total operations of a firm or its major divisions, while questions of performance often focus on more narrowly defined industries, product lines, or commodities. Thus, we face the dilemma of needing more detailed and costly data to properly evaluate food industry performance without significantly increasing the already heavy data reporting burden faced by most firms.

Several empirical measures have been developed to monitor and evaluate performance, but a difficult problem is developing performance measures that accurately reflect the dimension in question. The measure used may represent only part of the performance dimension, or a proxy for a dimension. For example, since the progressiveness of an industry cannot be measured directly, proxy measures such as research and development expenditures and number of inventions are used. There is an inherent danger in accepting a proxy measure as being synonomous with a performance criterion itself. Another tough problem is defining standards or norms for each performance measure. What constitutes good or bad performance in one industry must often be determined by comparisons with other industries in the economy or with the same industry in different time periods, or by compliance with legislated norms.

Existing empirical measures of performance include: Physical efficiency (engineering concepts of input/output relations); economies of scale; pricing efficiency (farm-retail price spreads and lags in price adjustment); rates of return to labor, management, and capital; product suitability and presentation (consumer satisfaction and adequacy of information for effective consumer choice); and selling costs.

In assessing what is theoretically required to evaluate market performance with actual existing empirical measures, I must conclude that the existing measurement system has many gaps. Maintaining measures meeting theoretical specifications would be extremely expensive and would require greater industry cooperation. Unilateral action by the State of California to improve performance measurement, for example, could be only partially effective because of the heavy incidence of interstate shipping in food items.

With this background on problems in measuring real life market performance, let's look at some trends in the food industry over time, keying some imperfect indicators of performance.

Market Structure

Numerous studies have shown a relationship between market structure, particularly the level of sales concentration, and performance criteria such as profitability and selling costs. Although such measures of market structure are likely to be rather weak proxy measures of performance—as indicated by the lack of conclusive evidence from such studies—they can provide valuable guidance to policymakers. These studies show, for instance, that sufficient plant size to achieve economies of scale in production does not require high concentration in most industries, and profit rates tend to increase significantly with high levels of concentration. Moderate levels of concentration, on the other hand, seem to cause little injury to performance and to prove beneficial to the progressiveness and technical efficiency of some markets.

Food processing is the largest manufacturing sector in the United States. Over 22,000 firms were classified as food manufacturers in the 1972 census. These firms operated over 28,000 food processing plants, 15 percent less than in 1967. While improved equipment and production processes contributed to declining plant numbers, economies of scale in food manufacturing are generally modest. Of the 28,000 processing plants in 1972, slightly over half employed fewer than 20 workers, while three-fourths of the plants employed fewer than 50 workers. Only 400 plants employed 500 or more workers.

However, there are larger economies of scale in the marketing and merchandising of food, especially for firms selling widely advertised brands. Concentration of sales among the top 4 firms varies considerably among the 4-digit SIC code food processing industries. In 1972, the top 4 firms in 11 out of 47 food processing industries controlled 50 percent of their industry's sales. Since the early 1960's, concentration of sales among the top 4 firms remained unchanged or declined for 20 industries, and rose in 21. Comparable data are not available for the remaining 6 industries.

In food retailing, there were about 185,000 grocery firms in 1967, of which 300 were chains with 11 or more stores. By 1972, the number of firms had declined 17 percent to 155,000, but the number of chains increased to 365. Between 1967 and 1972, chains increased their share of total stores from 12 to 17 percent and of sales, from 51 to 57 percent. But, the market share of the 20 largest chains remained relatively stable at around 35 percent between 1963 and 1972. However, in food retailing, local market areas are more appropriate units of analysis for assessing performance. Most local market areas are dominated by supermarkets operated by chains or by independent retailers which generally cooperatively own or are con-

tractually affiliated with a general line grocery wholesaler. In U.S. metropolitan area markets, the four largest grocery firms' share of total grocery sales increased from 46 to 51 percent between 1954 and 1967, but was only 1 percentage point higher in 1972 than in 1967.

Food processors and retailers have become increasingly active in developing vertical coordination and integration in the food sector. Processors have taken the lead in developing a higher degree of coordination of activities at the farm stage, largely through production contracts, while at the same time integrating backward into manufactured inputs such as packaging and integrating forward into distribution activities. Food retailers have also integrated backward to perform the wholesaling function, and in many cases own their own processing plants or have developed closer coordination with processors. For some commodities, largely fresh fruits and vegetables, retail chains deal directly with producers for a significant portion of their requirements. But contract production and backward integration into farming are not as dominant as some might think. In total, less than a fourth of U.S. agricultural output is produced under these vertical arrangements.

The predominant effect of vertical coordination in the food system has been to increase efficiency by facilitating administrative linkages among farming, processing, and distribution. However, these developments have also been a contributing factor to increasing levels of market concentration, which in turn has led to allegations of monopoly profits accruing to firms in these industries.

Another issue sometimes raised regarding the structure and performance of the food delivery system is the allegation that the poor pay more for food in the inner city. Studies have consistently found no significant differences in food prices in outlets of the same firm or little difference in the same type of store, whether located in the inner city or suburbs. But findings of several studies indicate that the number of supermarkets per unit of population and the average size of store is substantially smaller in the inner city than in the suburbs. Also, findings consistently indicate that smaller stores, which often characterize the food delivery system in the inner city, have both higher operating costs and prices. Consequently, to the extent that inner city residents do not have ready access to supermarkets and must shop at small stores which are more accessible, they are likely to pay more for food. The fact that openings of new supermarkets usually occur in the suburbs suggests that solutions have yet to be found as to how to give inner city residents better access to supermarkets or larger stores, or how to find other alternatives for providing them food at prices that are likely to be lower.

Most of my discussion has focused on the performance of our supermarket-oriented food distribution systems. However, there is renewed interest in another type of marketing—direct marketing from farmer to consumer. Although only a relatively small percentage of U.S. farm products is marketed through this channel, proponents see distinct advantages, such as higher returns to farm-

ers, lower prices to consumers, and fresher, better quality foods.

Direct marketing is of considerable importance in some areas where production is near population centers or heavily traveled highways and for certain commodities, principally fresh fruits and vegetables. Support for this method of marketing is evidenced by the recent passage by Congress of the Farmer to Consumer Direct Marketing Bill, which provides for measuring the extent of direct marketings of agricultural products in each State and for the promotion and development of this type of marketing system.

Food Prices

In the past several years, the U.S. food industry has been under considerable economic pressure. As a result of erratic domestic and foreign food production, rising consumer demand, persistent inflationary pressures and the energy crisis, food prices, marketing costs, and consumer food expenditures went up at rates which few of us considered possible a few years ago. In August 1976, the Consumer Price Index for all food was 46 percent higher than in 1972. In 1972, the farm food marketing bill totaled $78 billion; for 1976, we expect the bill to be around $110 billion. In 1972, consumers spent about $131 billion for food. The tab in 1976 will have been around $200 billion, an increase of about 50 percent in 4 years.

Larger food supplies and an easing of inflationary pressures greatly slowed the rise in food prices in 1976, and prospects look quite good for 1977. For 1976, we expect food prices to average 3 percent above 1975. This would be less than half the 1975 increase, and the smallest increase since 1971. Most of 1976's increase in retail food prices came from widening farm-retail spreads. The cost push on marketing spreads, although winding down from that in recent years, persists. On the food production side, it looks as though the farmer's share of the consumer's dollar for 1976 will have returned to the 40-cent level of the late 1960's and early 1970's, down from 42 cents in 1975 and 43 cents in 1974.

Price Spreads

The widening farm-retail price spread (the difference between prices received by farmers and the equivalent value at retail) has long been of great concern to housewives, farmers, and Government agencies. Very often this statistic is used as evidence that the industry is not performing well. Thus interpreted, the statistic may be misleading. In fact, the statistic is simply a gross measure of the cost (value) of all marketing services performed between farmer and consumer. Thus, farm-retail spreads represent total charges for assembling, processing, transporting, and distributing foods. They say nothing of the efficiency, equity, or progressiveness of the food marketing system.

We believe, however, that the statistic, particularly when broken down into its various components such as costs of various market-

ing functions, is useful for understanding what has been happening to food prices and where to look for further explanation of industry performance. Price spreads also provide a way of evaluating the responsiveness of price changes at the retail level to those at the farm level. This is of great concern to producers and consumers because of the frequent shifts in farm prices.

For many years, the Department of Agriculture has calculated and analyzed price spreads for a market basket of 65 domestically produced foods. This information is reported in a publication called "Agricultural Outlook," which we began publishing on a monthly basis about a year ago in an effort to provide the public the results of our analysis on a more timely basis.

Now let's look at the long-term trend in price spreads and their impact on food costs. Between 1952 and 1971, retail prices of U.S. farm foods rose 27 percent, reflecting a 4-percent increase in farm prices and a 46-percent increase in farm-retail spreads. Price spreads rose nearly every year during the 19-year period, while farm prices moved up and down. Thus, the long-term rise in the level of food prices is associated primarily with persistently rising price spreads. This period saw the farmer's share of the consumer's food dollar decline from about 50 cents to as little as 37 cents. During the 1960's, the farmer's share ranged between 37 and 41 cents.

More recent changes in price spreads and farm values differ dramatically from the long-trend. Since 1971, about half of the rise in retail prices of farm foods has been due to a 60-percent rise in the farm value of raw product equivalent to products at retail. The remaining half has been due to a 46-percent rise in the farm-retail spread. In other words, average farm level prices have more than kept pace with the rise in marketing charges in recent years. However, farm prices have moved up and down in recent years, whereas farm-retail price spreads have maintained a persistent upward trend.

The magnitude of farm-retail spreads varies widely among products, tending to be a larger proportion of the retail costs of crop products than animal products. The variation is largely due to differences in the relative amounts of resources used in production compared to the processing or other marketing services performed before a product reaches the consumer. The farm-retail spread for fresh fruits and vegetables represents two-thirds of the costs of these products at retail. Therefore, changes in price spreads have a greater impact on retail selling prices of fresh fruits and vegetables than is the case for most foods.

Marketing spreads for fresh fruits and vegetables in the market basket have shown a steady upward trend, rising nearly two-thirds in the past decade. For example, the farm-retail price spread for a carton of navel oranges rose from $4.60 in 1963-65 to $6.65 in 1973-75, an increase of 44 percent. Similarly, the price spread for a carton of lettuce rose from $4.09 to $7.28, or 78 percent.

Farm values of fresh fruits and vegetables also have risen, and

the farmer's share of the consumer's dollar spent for fresh fruits and vegetables has remained at about a third during the past decade.

Marketing Costs

Changes in marketing spreads over time are determined mainly by changes in costs of all factors involved in processing and distribution. Historically, the trend in farm-retail spreads has tended to parallel rather closely movements in the general price level. This relationship is not surprising since the operating needs of food marketing firms are fairly similar to those of firms in other industries.

Furthermore, the food industry, like many other industries, has had to be more responsive to the growing list of cost-increasing services demanded by consumers. These services include additional types of label information, more convenience foods, and an increased number of prepackaged products. Government has also been responsible for additional costs by requiring increased private investment for pollution control systems, safer working conditions, and improvements in the sanitation of processing and handling facilities.

Substantial cost increases have occurred in the past few years for nearly every input used by the food industry. This has been especially true for energy related goods and services, such as packaging materials, transportation services, and utility rates. Packaging material costs, which account for about an eighth of total food marketing costs, are 50 percent higher than they were 3 years ago. Fuel prices and electric rates, which rose an unprecedented 46 percent in 1974, have nearly doubled over the past 3 years. Railroad freight rates, which are very important to California shippers of fresh and processed fruits and vegetables, have risen 46 percent in 3 years.

However, since about half the costs of food marketing firms are for direct labor, much of the increase in price spreads has reflected higher labor costs. Hourly earnings of food marketing employees have increased at about a 10-percent annual rate in recent years. Hourly earnings in the second quarter of 1976 were $4.75, about a third higher than 3 years earlier.

Greater productivity, of course, may offset higher labor and other input costs. Unfortunately, we have not had much increase in productivity to offset the staggering increases in prices for fuel, packaging, labor, and other goods and services. Consequently, costs per unit of food marketed have risen rapidly. Output per manhour, the conventional measure of productivity, has been increasing about 2 percent a year in food manufacturing over the past decade. In contrast, productivity has been declining in food retailing in recent years. This decline has been attributed, in part, to a greater expansion in store capacity than to growth in the market. Thus, real dollar sales per square foot have declined and overhead costs for depreciation, rent, and other

occupancy costs have risen. Added together, the persistent upward trend in farm-retail price spreads is largely a result of rising costs and insufficient improvements in productivity to offset these higher costs.

Profits

No discussion of food marketing charges would be complete without some reference to the profits of food retailers, processors, and handlers. Profits have long been viewed with suspicion in marketing, as well as in other fields of economic activity. They are often thought of as something that can be reduced or eliminated without any effect on an industry. This notion ignores the function of profits, which is to acquire and attract capital for a company's maintenance and growth.

Profits are reported in varying ways. Food retailers like to present their earnings on the basis of percentage of sales. This permits large total dollar profits to appear small. But profit to sales is a meaningful measure for consumers because it can be related to how much they spend for food. Historically, most food retailers have earned slightly less than 1 cent profit after taxes per dollar of sales. Profits of retailers were severely depressed during much of the 1972-74 period, when economic controls were in force and inflation was at its worst. The rate of profit on sales depends importantly on the rate of inventory turnover, or the amount of time products stay in a company's inventory, and the nature of competition. Supermarkets turn over their inventory 15 to 20 times each year. Consequently, rates of profits on sales in food retailing, where there is a consistent flow of product, are about one-third lower than in food processing, where inventories are turned over far less frequently.

Another way of evaluating profits is on the basis of stockholders' equity. For the purpose of evaluating industry performance, returns on such equity in food retailing enterprises can be directly compared with those in other industries or with returns to financial investments, such as bonds. Returns on stockholders' equity in food retailing have historically averaged between 10 and 11 percent. However, profits of 15 leading food chains were below 10 percent of stockholders' equity from 1970 to 1974, mainly because of the sagging profits of A&P. In 1975, profit rates returned to previous levels, averaging 11 percent of stockholders' equity.

Rates of return on equity in food manufacturing have been about a fifth higher than in food chains, and have shown an upward trend in recent years. In 1975, profit after taxes of food manufacturers averaged 14.4 percent of stockholders' equity. However, generally speaking, the level and trend of profit rates in food manufacturing and retailing have not been much different from those in nonfood industries.

Based on the earnings performance of food companies, profits cannot be logically used as a major explanation for the magnitude of the increase and upward trend in farm-retail price spreads or retail food prices. On the other hand, the apparent reasonableness

of average industry earnings should not be used as the basis for justifying the profit levels of individual or groups of firms operating in selected markets or marketing specific commodities.

Components of Price Spreads

The 1964 National Commisssion on Food Marketing compiled a considerable amount of information about the industry and made recommendations for changes that might improve performance. All of this information is available in 10 technical reports issued by the Commission, which I would recommend to you if you have not seen them. The Commission was also very much interested in price spreads and thought they were useful for evaluating performance if three questions were asked: (1) Are profits reasonable? (2) are the functions for which marketing costs are incurred necessary ones? (3) are the functions performed efficiently? If the answers are positive, the magnitude of price spreads could be considered justified. Of course, these questions can be answered only by detailed examination of particular industries and then only with great difficulty.

We have made some estimates of the costs involved for various marketing functions to help better understand the uses to which our food dollars are put. Costs and profits comprising price spreads were estimated for 16 leading farm food items. For each item, estimates were made for 1974 on how the price spread was divided among marketing functions, such as retailing and processing; and among cost items, such as labor and packaging. Estimated costs for various functions represent the price spread between two market levels or the sum of estimated costs of a function, and do not necessarily represent the margins of indiviudal firms or groups of firms performing the function.

The costs of performing various functions vary widely among products. There are many reasons for this variation. To a large degree, differences in costs reflect the complexity of the marketing job that must be performed and the characteristics of the product. For most products the more work that must be done in changing the form of a product and providing service to satisfy the consumer, the greater the cost for processing. Processing costs are less than a fifth of the retail price for broilers, milk, and lettuce, items which undergo relatively little change in form. In contrast, they are around half the retail price of canned tomatoes.

The bulkiness and weight of products in relation to value and distance shipped account for differences in transportation costs among products. Costs of shipping meat, dairy, and poultry products, which are relatively dense in volume and of high value, account for only 2 or 3 percent of the retail price. But shipping costs for fresh produce and most canned and bottled products are much higher, ranging up to 10 percent of the selling price.

Marketing perishables is usually more costly than marketing other products, partly because of the large amounts of selling space occupied in the retail store. Of the items studied, the retail margin

was highest for California oranges and lettuce. Margins for these items averaged about two-fifths of the retail price, about double the retail margin for most other products.

The largest portion of the total marketing spread for most items is attributed to combined labor costs at each level of marketing. For beef, pork, eggs, and milk, labor costs account for around two-fifths of the spread. This figure actually understates the importance of labor because assembly and wholesaling costs for most products could not be allocated into labor and other expense items because of lack of data. After labor, transportation and packaging are the major costs of marketing most foods. Packaging costs vary widely among products, depending on the materials used. For eggs, the cost of the carton and other materials accounted for 16 percent of the total farm-to-retail spread. Packaging costs ranged from 5 to 10 percent of the marketing spread for most items. Transportation costs also vary widely among items, ranging from 6 percent of beef and pork spreads to around 15 percent for potatoes, which are bulky and low in value relative to their weight. Most other marketing costs, including advertising, capital costs, and repairs, are relatively small, each accounting for less than 5 percent of the spread. Profits taken by marketing firms before taxes accounted for between 5 and 10 percent.

While it is very difficult to evaluate how well they are performed, all marketing functions, from the assembly of products from many producers through processing and eventual distribution to points of consumption, are necessary operations in the food marketing system. While there are problems and inefficiencies in the system that, if corrected, would probably cut costs, food marketing is a complex system that has developed over a long period of time, making it difficult to appraise its performance and to suggest changes that might improve efficiency. It is possible that some basic changes are needed in the food marketing system, but it seems more likely that there are many relatively small things that could be done all along the way from farm to consumer to improve performance.

Pricing Efficiency

In any discussion of the behavior of price spreads and performance of the food industry, there is one recurring issue of particular interest to producers and consumers. That is the impact of changes in farm prices on wholesale and retail food prices. Both the size and timing of the impact are of crucial importance. The general feeling is that changes in farm prices are not readily passed on to the retail level. The performance of retailers, wholesalers, and processors in adjusting prices is important because when prices of individual commodities rise, consumers may decrease their purchases, as occurred a couple years ago with beef and sugar. Then, if subsequent reductions in farm prices are not passed on to the consumer rapidly, readjustment of purchases may not occur, thereby letting supplies depress prices and cause losses for farmers.

Farm price changes may not be fully reflected in retail prices in the short run. There are probably several explanations for this aside from the possibility of noncompetitive pricing. One of these is the practice of retailers of letting their margins increase somewhat when wholesale or farm prices fall, and absorbing some cost increases when prices rise. Moreover, the retailer's objective may be to maintain a specified gross margin in an overall department, such as produce, rather than on individual items such as lettuce. This may be done to minimize consumer dissatisfaction with changing prices, but both farmers and consumers would probably benefit if retail prices moved more closely with farm prices. Another reason for the lack of responsiveness of retail prices to changes in farm prices is that many processed foods, such as vegetables for canning, are purchased from growers many months before they are sold at retail. Prices during the marketing year reflect supply and demand conditions at the time the product is sold at retail as well as prices paid to growers.

To explore possible changes in pricing efficiency for fresh fruits and vegetables, the Economic Research Service recently examined the relationship between retail and shipping point prices between 1963-65 and 1973-75. Monthly retail prices for selected produce items were correlated with grower-level prices lagged by the time typically required to move the products from shipping point to consumer. Specific results of this analysis for six California-produced fresh fruits and vegetables sold in New York City are summarized in table 8.

These results point to some interesting observations, but unfortunately they do not lead to any definitive conclusions concerning changes in overall pricing efficiency. For three selected fresh fruit items, navel oranges, Valencia oranges, and Thompson seedless grapes, the degree of correlation between retail and grower-level prices decreased over the 10-year period. In other words, changes in shipping point prices were less closely followed by retail price changes in 1973-75 than in 1963-65. On the other hand, for all three of the fresh vegetables studied, the relationship between shipping point and retail prices improved between 1963-65 and 1973-75. For all six produce items, the retail-shipping point price spread increased dramatically in absolute dollar terms, but there was little change in the price spread as a percentage of retail price. Such inconsistent results underly the frustration of economists trying to draw sound conclusions concerning pricing efficiency and market performance in general.

Consumer Satisfaction

Perhaps the ultimate objective of production and marketing activity is to provide products and services which satisfy the diverse needs and wants of consumers. Thus, consumer satisfaction is an important measure of market performance. Consumer satisfaction with food products and marketing services was monitored by ERS in a nationwide survey in 1974 and again in 1976.

In 1976, consumers were generally more satisfied with food products and shopping information than in 1974. Satisfaction improved or remained unchanged for all seven major product groups except for the prepared or convenience foods group. Even though this product group had the lowest average satisfaction score in 1974, satisfaction decreased an additional 5 percentage points in 1976. Respondents seemed to be particularly unhappy with the perceived nutritional benefits and value received for money spent on several products in this group. Satisfaction with fresh vegetables improved between 1974 and 1976, but was still at a relatively low level. In fact, respondents were least happy with fresh tomatoes of all 32 food items surveyed. Satisfaction with food advertising and shopping information on package labels improved slightly, but remains at a relatively low level. Satisfaction with perceived truthfulness and accuracy of food ads sponsored by manufacturers received the lowest rating.

Summary

I title my closing remarks "summary" rather than "conclusions" because of the obvious problems associated with assessing market performance. Let me reiterate some important points which I feel your subcommittee should consider in your study and deliberations.

(1) Market performance is difficult to measure, and "good" performance in the eyes of one segment of an industry may appear less desirable to another.

(2) The measures of performance typically used by economists are inadequate in several ways, and must be carefully interpreted to avoid inappropriate conclusions concerning equity, efficiency, progressiveness, and responsiveness in the food marketplace.

(3) Improved performance measures would be costly, not only in resources required for summary and interpretation but also in terms of burdensome reporting requirements on the part of marketing firms.

(4) Farm-retail price spreads for all foods have mushroomed in recent years but farm prices have kept pace. Thus, there has been little change in the relative farm share of the consumer's food dollar. Increases in spreads, which are payments for marketing services, have closely paralleled increases in energy-related operating expenses and labor costs.

(5) "Sticky" retail prices in the presence of falling farm prices may result from retail and processor pricing practices that stress price stability and department margins as well as from changes in supply and demand conditions after products are sold by farmers. Although sticky prices are not necessarily evidence of malicious behavior or poor performance, they can unquestionably harm producers of individual commodities.

I hope I have not interjected pessimism in your quest for a better understanding of market performance. I again commend you for working to improve knowledge in this critical area. The U.S.

Department of Agriculture is also vitally concerned with improving market performance in the food industry. We applaud your efforts and pledge our assistance in any way possible.

Table 1—The market basket of farm foods: Retail cost, farm value, and farm-retail spread indexes and farmer's share of the retail cost[1]

Year and quarter	Retail cost	Farm value	Farm-retail spread	Farmer's share
		1967=100		*Percent*
1965	96.0	99.2	93.9	40
1966	101.1	106.3	97.8	41
1967	100.0	100.0	100.0	39
1968	103.6	105.3	102.5	39
1969	109.1	114.8	105.5	41
1970	113.7	114.1	113.4	39
1971	115.7	114.4	116.5	38
1972	121.3	125.1	118.9	40
1973	142.3	167.2	126.5	46
1974	161.9	178.4	151.4	43
1975	173.6	187.1	165.1	42
1976[2]	175.4	178.8	173.2	40
1976				
I[2]	176.7	183.5	172.5	40
II[2]	175.3	183.1	170.4	41
III[2]	176.0	179.1	174.1	39
IV[2]	173.5	169.5	176.0	38

[1] The market basket contains the average quantities of domestic, farm-originated food products purchased annually per household in 1960 and 1961 by wage earners and clerical worker families, and workers living alone. Its retail cost is calculated from retail prices published by the Bureau of Labor Statistics. The farm value is the gross return to farmers for the farm products equivalent to foods in the market basket. The farm-retail spread—difference between the retail cost and farm value—is an estimate of the total gross margin received by marketing firms for assembling, processing, transporting, and distributing the products in the market basket. Indexes may be converted to dollar totals by multiplying by the following amounts for 1967; retail cost, $1,080.64; farm value, $419.07; and farm-retail spread, $661.57. Quarterly data are annual rates.[2] Preliminary.

Table 2—Fruits, fresh: Retail cost, farm value, farm-retail spread, and farmer's share of retail cost, 1965-76[1]

Period	Retail cost	Farm value	Farm-retail spread	Farmer's share	Period	Retail cost	Farm value	Farm-retail spread	Farmer's share
	----- *Dollars* -----			*Percent*		----- *Dollars* -----			*Percent*
1965	43.09	13.52	29.57	31	1972:				
1966	45.83	14.83	31.00	32	Jan.-Mar.	53.50	14.98	38.52	28
1967	46.01	14.27	31.74	31	Apr.-June	57.51	16.27	41.24	28
1968	54.44	18.91	35.53	35	July-Sept.	63.99	19.94	44.05	31
1969	51.62	15.91	35.71	31	Oct.-Dec.	60.27	18.82	41.45	31
1970	51.52	14.45	37.07	28	1973:				
1971	55.68	16.68	39.00	30	Jan.-Mar.	60.62	21.74	38.88	36
1972	55.82	17.50	38.32	31	Apr.-June	66.58	23.89	42.69	36
1973	66.86	22.13	44.73	33	July-Sept.	71.55	22.78	48.77	32
1974	73.15	21.79	51.36	30	Oct.-Dec.	68.70	20.12	48.58	29
1975	74.82	22.80	52.02	30	1974:				
1976[2]	75.51	21.43	54.08	28	Jan.-Mar.	68.49	20.49	48.00	30
					Apr.-June	73.78	22.47	51.31	30
1970:					July-Sept.	79.00	23.11	55.89	29
Jan.-Mar.	46.96	12.32	34.64	26	Oct.-Dec.	71.34	21.10	50.24	30
Apr.-June	51.24	13.81	37.43	27					
July-Sept.	57.52	16.68	40.84	29	1975:				
Oct.-Dec.	50.38	14.98	35.40	30	Jan.-Mar.	69.85	21.05	48.80	30
					Apr.-June	77.63	26.21	51.42	34
1971:					July-Sept.	83.04	24.15	58.89	28
Jan.-Mar.	50.17	14.83	35.34	30	Oct.-Dec.	68.77	19.80	48.97	29
Apr.-June	56.34	17.35	38.99	31					
July-Sept.	62.50	17.94	43.56	29	1976:[2]				
Oct.-Dec.	53.70	16.61	37.09	31	Jan.-Mar.	66.90	17.56	49.34	26
					Apr.-June	74.16	19.96	54.20	27
					July-Sept.	81.36	24.11	57.25	30
					Oct.-Dec.	79.63	24.09	55.54	30

[1] Average quantities bought annually per household in 1960-61 by families of wage earners and clerical workers and workers living alone. [2] Preliminary.

Table 3—Vegetables, fresh: Retail cost, farm value, farm-retail spread, and farmer's share of retail cost, 1965-76

Period	Retail cost	Farm value	Farm-retail spread	Farmer's share	Period	Retail cost	Farm value	Farm-retail spread	Farmer's share
	----- *Dollars* -----			*Percent*		----- *Dollars* -----			*Percent*
1965	70.44	24.69	45.75	35	1972:				
1966	68.82	23.25	45.57	34	Jan.-Mar.	87.69	27.37	60.32	31
1967	68.52	21.92	46.60	32	Apr.-June	86.74	27.35	59.39	32
1968	72.57	23.87	48.70	33	July-Sept.	88.07	29.87	58.20	34
1969	76.16	24.81	51.35	33	Oct.-Dec.	90.20	27.89	62.31	31
					1973:				
1970	81.42	25.83	55.59	32	Jan.-Mar.	100.96	36.44	64.52	36
1971	83.45	27.30	56.15	33	Apr.-June	118.95	46.40	72.55	39
1972	88.17	28.12	60.05	32	July-Sept.	117.18	39.22	77.96	33
1973	109.42	38.20	71.22	35	Oct.-Dec.	100.58	30.75	69.83	31
1974	118.84	39.79	79.05	33	1974:				
					Jan.-Mar.	116.21	40.46	75.75	35
1975	114.07	39.58	74.49	35	Apr.-June	138.33	46.70	91.63	34
1976[2]	120.87	40.22	80.65	33	July-Sept.	115.94	36.53	79.41	32
					Oct.-Dec.	104.86	35.46	69.40	34
1970:					1975:				
Jan.-Mar.	83.16	28.17	54.99	34	Jan.-Mar.	107.28	36.53	70.75	34
Apr.-June	87.56	28.91	58.65	33	Apr.-June	110.65	39.62	70.03	36
July-Sept.	80.02	25.03	54.99	31	July-Sept.	124.38	43.30	81.08	35
Oct.-Dec.	74.94	21.21	53.73	28	Oct.-Dec.	113.97	38.87	75.10	34
1971:					1976:[2]				
Jan.-Mar.	77.71	26.61	51.10	34	Jan.-Mar.	121.14	42.28	78.86	35
Apr.-June	88.45	29.49	58.96	33	Apr.-June	125.55	40.75	84.80	32
July-Sept.	82.95	24.27	58.68	29	July-Sept.	117.78	37.54	80.24	32
Oct.-Dec.	84.70	28.81	55.89	34	Oct.-Dec.	119.00	40.30	78.70	34

[1] Average quantities bought annually per household in 1960-61 by families of wage earners and clerical workers and workers living alone. [2] Preliminary.

Table 4—Prices of inputs bought by food marketing firms, annual 1970-75, quarterly 1976

Year and quarter	Intermediate goods and services[1]				
	Total	Goods			Services[2]
		Total	Containers and packaging materials	Fuel, power, and light	
	1967=100				
1970	113	108	108	108	120
1971	120	113	113	120	129
1972	126	118	117	126	138
1973	134	125	123	138	145
1974	159	161	151	202	157
1975	180	186	174	237	172
1976[3]	194	201	189	258	186
1976[3]					
I	186	192	179	243	179
II	191	197	185	252	184
III	194	199	185	260	188
IV	206	217	207	278	191

	Hourly earnings of employees[5]	Railroad freight rates[5]	New plant and equipment[6]	Interest rates[7]	Bond yields[8]
	Dollars	*1969=100*	*1972=100*	*Percent*	*Percent*
1970	3.03	109	91	8.48	8.04
1971	3.24	122	96	6.32	7.39
1972	3.45	126	100	5.82	7.21
1973	3.66	129	104	8.30	7.44
1974	3.99	149	116	11.28	8.57
1975	4.40	169	132	8.65	8.83
1976[3]	4.76	185	138	7.52	8.43
1976[3]					
I	4.65	179	136	7.54	8.56
II	4.74	185	138	7.44	8.53
III	4.79	186	139	7.80	8.46
IV	4.88	189	140	7.28	8.18

[1] Represents all goods except raw materials and plant and equipment, and all services except those performed by employees, calculated from wholesale price relatives. [2] Rent, property insurance and maintenance, telephone, and so on. [3] Preliminary. [4] Weighted composite of production employees in food manufacturing and nonsupervisory employees in wholesale and retail trade, calculated from data of the Dept. of Labor. [5] For food products compiled from data of the U.S. Department of Labor. [6] GNP implicit price deflator for investment in nonresidential structures and producer's durable equipment, U.S. Department of Commerce. [7] Bank rates on short-term business loans in 35 centers, U.S. Department of Commerce. [8] Aaa corporate bonds, Moody's Investor Service. These yields indicate the cost of current long-term borrowings.

Table 5—Profits after Federal income taxes of food chains and manufacturers, annual 1963-75

Year	15 leading food chains[1]	Food manufacturers[2]	All manufacturing industries[2]
	Percent return on stockholder equity		
1963	11.4	9.0	10.3
1964	11.5	10.1	11.7
1965	11.3	10.7	13.1
1966	11.4	11.3	13.6
1967	10.3	10.9	11.8
1968	10.3	10.8	12.2
1969	10.4	10.9	11.5
1970	10.6	10.8	9.3
1971	9.6	11.0	9.7
1972	5.1	11.2	10.6
1973	8.2	12.8	12.8
1974	4.8	13.9	14.9
1975	11.0	14.4	11.6
	Percent return on sales		
1963	1.2	2.4	4.7
1964	1.3	2.7	5.2
1965	1.2	2.7	5.6
1966	1.2	2.7	5.6
1967	1.1	2.6	5.0
1968	1.1	2.6	5.1
1969	1.1	2.6	4.8
1970	1.0	2.5	4.0
1971	.9	2.6	4.1
1972	.5	2.6	4.3
1973	.7	2.6	4.7
1974	.4	2.9	5.5
1975	.8	3.2	4.6

[1] Compiled from "Moody's Industrial Manual." [2] Compiled from "Quarterly Financial Reports" published by the Federal Trade Commission. Data for 1974 and 1975 are imperfectly comparable with prior data because of changes in accounting methods.

Table 6—Distribution of retail price according to farm value and marketing function, 16 farm food products, 1974

Food item and retail unit	Farm value[1]	Marketing functions					Retail price
		Assembly and procurement	Processing	Intercity transportation	Wholesaling	Retailing[2]	
				Cents			
Beef, Choice (pound)	86.1	1.7	8.3	1.3	8.2	33.2	138.8
Pork (pound)	60.8	1.9	13.3	1.4	6.4	24.4	108.2
Broilers (pound)	31.5	1.4	7.2	1.4	3.3	11.2	56.0
Eggs, grade A or AA large (dozen)	53.2	1.2	8.9	1.5	3.2	10.3	78.3
Milk, sold in stores (½ gallon)	40.9	2.7	10.7	([3])	13.6	10.5	78.4
Butter (pound)	58.6	3.3	8.9	1.5	5.4	16.8	94.5
Oranges, Calif. (dozen)	34.6	1.7	17.2	13.9	9.0	50.7	127.1
Lettuce, Calif. (head)	6.3	.3	8.3	6.3	3.0	18.2	42.4
Potatoes (10-pound bag)	67.5	([4])	24.7	15.5	3.7	63.4	174.8
Orange juice, frozen (6-oz. can)	8.5	.6	6.5	1.3	3.1	5.8	25.8
Tomatoes, Calif. (whole, no. 303 can)	3.8	.5	15.2	2.7	1.6	6.0	29.8
Tomato catsup, Calif. (14-oz. bot.)	5.6	.8	19.9	3.4	3.2	5.5	38.4
Bread, white (pound)	8.0	.6	[5]9.9	[6].4	9.8	5.8	34.5
Margarine, (pound)	27.7	1.6	[7]16.5	.4	1.6	9.6	57.4
Salad and cooking oil (24-oz. bottle)	44.6	2.9	[7]45.5	1.8	.7	11.3	106.8
Vegetable shortening (3 pounds)	97.5	6.1	[7]64.8	1.9	([8])	8.7	179.0

[1] The farm value is the gross return to farmers for the quantity of farm products equivalent to the unit sold at retail minus imputed value of byproducts. Because of losses from processing, waste, and spoilage the farm value represents larger quantities than the retail unit. [2] Instore costs only. Headquarters and warehousing expenses are included in wholesaling. [3] Included in wholesaling. [4] Included in farm value. [5] Flour milling and bread baking. [6] Flour only. [7] Includes oilseed crushing, crude oil refining, and manufacturing of finished product. [8] Implicitly included in costs of other functions.

Table 7—Cost components of the marketing bill for farm foods

Year	Labor[1]	Packaging	Transportation[2]	Profits[3]	Other[4]	Total
	Billion dollars					
1960	19.7	5.4	4.1	2.1	13.3	44.6
1965	23.3	6.2	4.2	3.0	17.3	54.0
1970	32.3	8.5	5.2	3.6	21.5	71.1
1971	34.5	9.0	6.0	3.9	22.0	75.4
1972	37.6	9.4	6.1	3.5	21.8	78.4
1973	40.4	9.9	6.1	4.6	21.5	82.5
1974	46.6	11.6	7.3	5.3	22.5	93.3
1975[5]	52.7	13.4	8.5	6.7	22.4	103.7

[1] Includes supplements to wages and salaries such as social security and unemployment insurance taxes and health insurance premiums. Also includes inputed earnings of proprietors, partners, and family workers not receiving stated remuneration. [2] Excludes charges for local hauling and air and water transportation. [3] Before-tax corporate profits. [4] Includes business taxes, depreciation, rent (net), advertising, repairs, bad debts, contributions, interest (net), and other costs. [5] Preliminary.

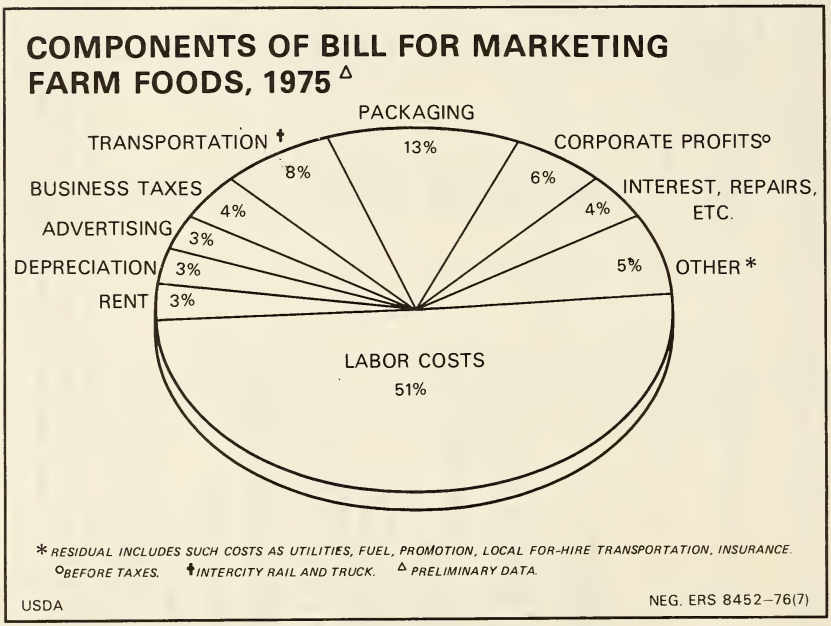

Table 8—Simple regression of N.Y.C. retail price against shipping point price, selected California-origin items, 1963-65 and 1973-75

Commodity	Time period	Average monthly price		Average spread		Regression statistics			"F" value for coefficient Change[1]
		Shipping point	Retail	Abs.	Percent of retail	Int.	Slope	R^2	
		----- *Dollars/units*[2] -----			*Percent*	----- *Dollars/unit*[2] ---- -			
Navel oranges (37.5 # Carton)	1963-65	2.84	7.44	4.60	61.8	2.68	1.67	.58	18.56
	1973-75	3.65	10.30	6.65	64.6	5.11	1.42	.48	
Valencia oranges (37.5 # Carton)	1963-65	3.08	8.05	4.97	61.7	3.93	1.34	.77	29.39
	1973-75	3.56	9.87	6.31	63.9	8.48	.39	.05	
Thompson seedless grapes (25-27 # Lug)	1963-65	3.90	8.41	4.51	53.6	2.61	1.48	.95	76.01
	1973-75	6.29	15.02	8.73	58.1	9.25	.92	.81	
Carrots (48-1 # Bags)	1963-65	2.81	7.30	4.49	61.5	4.62	.95	.55	41.77
	1973-75	4.53	11.66	7.13	61.1	5.55	1.35	.68	
Celery (60 # Crate)	1963-65	2.58	8.27	5.69	68.8	5.59	1.04	.57	218.33
	1973-74	3.85	14.29	10.44	73.1	10.43	1.00	.63	
Lettuce (24 head carton)	1963-65	1.83	5.92	4.09	69.1	4.39	.84	.48	133.72
	1973-75	3.19	10.47	7.28	69.5	6.64	1.20	.84	

[1] F-value shown is for test of change in coefficient set (intercept and slope) between 1963-65 and 1973-75. All F-values are significant at the 1% level of confidence. [2] Units are shown beneath commodity name.

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